



Furnace Elevation to Prevent Future Damage

Full Mitigation Best Practice Story

Montgomery County, New York

Starkeville, NY - Beginning in late June 2006, a storm of major proportions crawled across the eastern United States. Rainfalls broke records, creeks and streams climbed their banks and spilled into communities, and rivers crested far above flood stage. The Susquehanna River raged through New York and Pennsylvania, flooding everything in its path. Hundreds of homes were destroyed, roads were washed out, and bridges fell. People were driven from their homes, only to return to the mud and stench of filthy water left behind.



Otsquago Creek meanders through the town of Starkeville, New York. Normally it is a quiet, beautiful spot that attracts wildlife and residents alike. The creek flows just behind Leah Cook's house, takes a turn to the east and moves on. All that changed in late June when torrential rains filled the creek to flood stage and sent the raging water over its banks and into Leah's cellar.

Leah's house dates back to the 1800s, and the cellar walls have seen flooding before. But in her 56 years in the house, Leah had never seen the creek as high as it was in June.

When the cellar flooded, the gas furnace Leah had installed in 1985 was ruined and the sump pump (used to pull out the water) was without power. Floodwater sat in the rock-walled room for several days until firemen came to the rescue with their heavy-duty pump and cleared it out.

"This time it flooded my cellar up to four feet," said Leah, who was gone when the flood occurred. "I came home to find a very wet cellar with thick mud caked on everything, including my year's supply of home-canned fruit and vegetables."

The inspector arrived after Leah called FEMA and the State of New York to register for assistance. Before any help could be provided, an inspector checked out the cellar to assess the damage.

"I didn't turn the furnace on when the electricity came back," said Leah, "because I figured the old heater would blow up, and I told the FEMA inspector he couldn't turn it on either."

With the assistance money Leah received to replace her old furnace, she decided to do something unusual with the new one; she had it attached to the cellar ceiling.

"I'd heard about people doing this and I said, 'that's what I'm going to do,' Leah said.

Should the creek pour into Leah's cellar again, her furnace should be safely above the floodwaters.

Leah's new furnace lies horizontally across beams hung from the ceiling. The heater's higher efficiency should also provide Leah with better fuel consumption and lower propane bills in the winter.

Raising the furnace is highly recommended to avoid damage in future flooding. Furnaces that sit on the basement floor are susceptible to flooding of even a few inches, so raising the furnace or suspending it from the ceiling can save the furnace should flooding reoccur.

"A good guide for raising the furnace is to look at the height of the last flood and install the furnace a foot higher," says David Gillespie of FEMA. "It doesn't take much to get the furnace out of harm's way."

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region II**

State: **New York**

County: **Montgomery County**

Key Activity/Project Information

Sector: **Private**

Hazard Type: **Flooding**

Activity/Project Type: **Elevation, Utilities**

Activity/Project Start Date: **06/2006**

Activity/Project End Date: **Ongoing**

Funding Source: **Hazard Mitigation Grant Program (HMGP)**

Activity/Project Economic Analysis

Cost: **Amount Not Available**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Unknown**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.fema.gov/government/grant/hmgp/>

Reference URL 2: <http://www.floodsmart.gov>

Main Points

- Repeat flooding in Leah Cook's cellar ruined her furnace
- She applied for a FEMA grant and used the money for a project to elevate the furnace
- Should her cellar be flooded again, Leah Cook's furnace will be safe from damage.

